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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/518,959	12/17/2004	Chikafumi Yokoyama	57993US005	5068
32692 7590 07/23/2008 3M INNOVATIVE PROPERTIES COMPANY PO BOX 33427 ST. PAUL, MN 55133-3427				
EXAMINER BUTLER, PATRICK NEAL				
ART UNIT		PAPER NUMBER		
1791				
NOTIFICATION DATE		DELIVERY MODE		
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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# Office Action Summary

**Application No.**

10/518,959

**Applicant(s)**

YOKOYAMA ET AL.

**Examiner**

Patrick Butler

**Art Unit**

1791

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 April 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 9-12 and 18-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9-12 and 18-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB06)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 9-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to Claim 9, the term "hygroscopic" in lines 4 and 7 of the claim is unclear in that it conflicts with "containing moisture to saturation" in line 5 of the claim. This is unclear because the support would not be able to absorb moisture and thus be hygroscopic if it is completely saturated. Claims 10-12 are rejected via their dependency. For purposes of examination, the claim is interpreted similar to Claim 15 in that the support is hygroscopic before being saturated.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 9-12 and 18-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chiu et al. (US Patent No. 6,247,986) in view of Brown et al. (US Patent No. 4,912,948).

With respect to Claim 9, Chiu teaches a method of making a microstructure pattern on a substrate (a method of manufacturing a microstructure having a projection pattern having a predetermined shape and a predetermined size on a surface of a substrate) by providing a flexible polymer mold 30, 80 that has flexible base (providing a flexible mold) made of PET materials (comprising a plastic film), with the base's elongation varying according to the environment's temperature and humidity (hygroscopic; reversibly changes in dimension depending on temperature and relative humidity) (see abstract; fig. 3; col. 6, lines 37-62; col. 10, line 58 through col. 11, line 2; and col. 11, lines 44-67). Chiu teaches that the microstructured resin mold is held on the substrate (a molding layer deposited on said hygroscopic plastic film and having a groove patten having a shape and a size corresponding to those of said projection pattern on a surface thereof) (see col. 10, line 58 through col. 11, line 2). Material is placed between the mold and the substrate (arranging a curable molding material between said substrate and a molding layer of said mold and filling said molding material into said groove patten of said mold) (see col. 7, lines 12-33) and cured (curing said molding material and forming a microstructure having said substrate and said projection pattern integrally bonded to said substrate) (see col. 8, lines 31-51). The mold is then removed (releasing said microstructure from said mold) (see col. 8, lines 51-53).

Chiu does not appear to explicitly teach that the tensile strength of the plastic film is within the claimed range (e.g., at least 5 kg/mm<sup>2</sup>).

However, in this regard, Chiu teaches making the base string enough to be able to endure the handling of the mold during process of making and using the mold (see col. 11, lines 44-56). As such, Chiu recognizes that the tensile strength of the plastic film is a result-effective variable. Since the tensile strength of the plastic film is a result-effective variable, one of ordinary skill in the art would have obviously been motivated to determine the optimum tensile strength of the plastic film applied in the process of Chiu through routine experimentation based upon providing sufficient durability.

Chui does not expressly teach that the plastic film contains moisture to saturation at a temperature and a relative humidity at the time of use by a humidity absorption treatment applied in advance.

Brown teaches treating flexible sheet material such as PET to saturation in order to apply treatments such as corrosion or electrical inhibition, lubricants, or wet or dry strength resin application (see col. 7, lines 39-61 and col. 8, lines 5-38).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Brown's flexible sheet treatment in Chui's flexible sheet in order to provide a sheet that has as decoration, corrosion or electrical inhibition, lubricants, or wet or dry strength resin application (see col. 7, lines 39-61 and col. 8, lines 5-38).

With respect to Claim 10, Chui teaches curing using visible light and ultraviolet light (said molding material is a photo-curable material) (see col. 8, lines 34-39).

With respect to Claim 11, Chui teaches that the substrate is the plasma display panel's back substrate (said microstructure is a back plate for a plasma display panel) (see col. 3, lines 34-49).

With respect to Claim 12, Chui teaches forming microstructures on a plurality of parallel electrodes (independently arranging a set of address electrodes substantially in parallel with each other while keeping a predetermined gap between them on a surface of said substrate) (see col. 6, line 63 through col. 7, line 11).

With respect to Claim 18, Chiu teaches the flexible polymer mold 30, 80 has a flexible base made of PET materials (plastic film comprises polyethylene terephthalate) (see col. 11, lines 44-67).

With respect to Claim 19, Chui teaches the flexible polymer mold 30, 80 has a flexible base of a thickness of 0.025 millimeters to 0.5 millimeters, which includes the claimed range of 0.05 mm to 0.5 mm (see col. 11, lines 44-67).

With respect to Claim 20, Chui teaches that the base of the patterned mold may be a film, which would necessarily be one or more layers (a single-layered film, a composite, or a laminate) (see col. 11, lines 44-67).

With respect to Claim 21, Chui teaches using making the mold structures from glass, ceramic, and a binder (see col. 12, lines 28-36 and col. 12, line 64 through col. 13, line 30).

With respect to Claim 22, Chui teaches that the mold is use to cure though and that visible light is used to cure, which is necessarily clear and specifically taught to be clear (see col. 8, lines 34-50 and col. 11, lines 44-48).

With respect to Claim 23, Chui teaches curing using visible light and ultraviolet light (said molding material is photocured) (see col. 8, lines 34-39).

Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chiu et al. (US Patent No. 6,247,986) in view of Brown et al. (US Patent No. 4,912,948) as applied to claim 9 above, and further in view of Kakinuma et al. (US Patent No. 5,840,465).

With respect to Claim 24, Chui in view of Brown teaches making a microstructure as previously described. Chui teaches improved methods of screen printing by using a mold (see col. 1, lines 31-45).

Chui does not expressly teach that the molding layer is a lattice pattern.

Kakinuma teaches making barrier ribs of a plasma display panel by making latticed barrier ribs by screen printing (see col. 1, lines 16-60 and col. 4, lines 45-63).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to select Kakinuma's screen printing of latticed ribs as the mold shape of Chui in order to provide latticed barrier ribs for DC type plasma display panels (see Kakinuma, col. 1, lines 16-60).

### ***Response to Arguments***

Applicant's arguments filed 28 September 2007, 13 December 2007, and 15 April 2008 have been fully considered but they are not persuasive.

Applicant argues with respect to the 35 USC § 112 rejections. Applicant's arguments appear to be on the grounds that:

- 1) The claim amendments obviate the 35 USC § 112 rejections.

Applicant argues with respect to the 35 USC § 103(a) rejections. Applicant's arguments appear to be on the grounds that:

2) Teijin, as combined in the rejection, fails to teach the require water absorption as required by the amended claim.

The Applicant's arguments are addressed as follows:

1) Claims 9-12 remain indefinite as the claim language requires the film to simultaneously be able to absorb moisture and contain moisture to saturation as described above.

2) Applicant's arguments with respect to claims 9-12 have been considered but are moot in view of the new ground(s) of rejection as necessitated by Applicant's amendments.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of



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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick Butler whose telephone number is (571) 272-8517. The examiner can normally be reached on Mon.-Thu. 7:30 a.m.-5 p.m. and alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on (571) 272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/P. B./

Examiner, Art Unit 1791

/Monica A Huson/

Primary Examiner, Art Unit 1791

